Alytes, 2024, **41** (1–4): 1–4.

Nomenclatural censorship puts biodiversity conservation and taxonomic science at risk

Daniel JABLONSKI[1] & Christophe DUFRESNES[2]

[1] Department of Zoology, Comenius University in Bratislava, Bratislava, Slovakia.
<daniel.jablonski@uniba.sk>, https://orcid.org/0000-0002-5394-0114.

[2] Institut de Systématique, Evolution, Biodiversité (ISYEB), Muséum national d'Histoire naturelle, CNRS, Sorbonne Université, EPHE, Université des Antilles, Paris, France.
<christophe.dufresnes@hotmail.fr>, https://orcid.org/0000-0002-8497-8908.

Botanical and zoological nomenclatures provide some of the most stable pillars of modern science. These pillars are now being shaken by the proliferation of ideological concerns against eponymous taxa over ethical grounds. This includes thousands of amphibian species named after a person. We protest against recent initiatives aiming to subjectively replace valid taxonomic names, as it opens a Pandora box that could destabilize species lists and all that relies upon them, including biodiversity conservation policies. Rather than negating former practices to feed contemporary cultural and social norms, we encourage the use of the limited resources available for taxonomic research – an instrumental yet neglected discipline – to describe the millions of species that are left to discover on Earth amid the current biodiversity crisis.

urn:lsid:zoobank.org:pub:0AF7BAA5-8AAD-4DEA-A917-32CBE3F4CC93

Scientific names are the keystone of our modern classification system established by Carl Linnaeus in the 18th century (Linnaeus 1753, 1758). Today, binominal (and trinominal) Latin names remain the official designation of species (and subspecies) in legislations and allow to communicate about them beyond language boundaries in many fields including medicine, agriculture and biodiversity conservation. Naming a taxon is necessarily a legal act, regulated by rules defined by international commissions of nomenclature founded more than one century ago and regularly updated following emerging scientific challenges. These rules are specifically designed for an exhaustive and objective labelling of Earth's plants and animals, aiming towards a standardized and stable repertoire throughout the history of biological sciences (Ceríaco *et al*. 2023).

The last few years have seen the emergence of an ideological debate about eponymous taxa, i.e., taxa that were initially named to honor a person or a geographic region (Pérez Ortega 2023). As a response towards gender and ethnic biases, nepotism and cronyism in eponyms (e.g., Poulin *et al*. 2022), motives and ways to rename valid

taxa have been intensively discussed. For instance, it was proposed to replace "colonialist" names by indigenous ones (Gillman & Wright 2020; Wright & Gillman 2022), or to remove those that are deemed "offensive and inappropriate" (Hammer & Thiele 2021), based on ethical grounds. The trend reached a climax in spring 2023, when a highly-visible opinion piece recommended the wiping of any taxon currently named after a specific person, for reasons of equality and representation (Guedes *et al*. 2023), thus establishing a perilous precedent.

In line with subsequent protests (e.g., Jost *et al*. 2023; Antonelli *et al*. 2023; Jiménez-Mejías *et al*. 2023), we argue that encouraging a "cancel culture" in biological nomenclature could be harmful for biodiversity protection and to the science of taxonomy. Discarding centuries of taxonomic work would massively reshuffle species checklists worldwide and thus be detrimental to the numerous policies that rely upon them. Conservation policies, such as red lists and protection plans of endangered species, would be the most affected. Relaxing nomenclatural rules to allow the retroactive removal of valid eponyms would discredit biological sciences to the public and plunge them into a crisis.

There are probably hundreds of thousands of eponym taxa described after a person, including more than 2,500 in amphibians (Beolens *et al*. 2013). Many more make references to geographic places (countries or regions) that have changed names multiple times following the tumultuous history of civilizations, some still being disputed. All these names, controversial or not, tell stories about the dedicated scientists involved in the discovery of biodiversity (sometimes to the peril of their lives), the epochs they lived in, and they anyhow represent a legacy of human creativity (Heard & Mlynarek 2023). For the better or worse, eponyms ensure that these memories survive, so the future can be built by explaining and drawing lessons from the past rather than negating it.

Many species names, not simply eponyms of controversial persons and places, could in principle be criticized over geopolitical motivations, religious beliefs and militant opinions. If we open the Pandora box of nomenclatural censorship, then requests may extend to any names that convey any forms of undesirability and mockery. In amphibians, these could include names viewed as pejorative, downgrading or defamatory like *Triturus carnifex* (Laurenti, 1768) (carnifex means "butcher"), the extinct genus *Beelzebufo* Evans, Jones & Krause, 2008 (literately "Belzebuth toads"), *Rhacophorus turpes* Smith, 1940 (turpes means "ugly"), or *Kurixalus idiootocus* (Kuramoto & Wang, 1987) (which refers to its peculiar egg laying behavior, but can be easily twisted); names that are scientifically misleading like the Italian endemic frog *Pelophylax hispanicus* (Bonaparte, 1839) (hispanicus means "Spanish"); or names with a long and/or unorthodox orthography displeasing to dyslexic readers like *Hynobius pseudoutsunomiyaorum* Sugawara, Iwata, Naito, Yamada, Onomura & Nagano, 2023, or *Pristimantis w-nigrum* (Boettger, 1892). Pushing this rationale to a humorous extreme, should *Pelophylax fukienensis* (Pope, 1929) be considered rude in English? Or *Amolops loloensis* (Liu, 1950) outrageous in French ("lolo" being an old-fashioned macho word to designate a woman's breast)? Is *Eleutherodactylus corona* Hedges & Thomas, 1992 disrespectful to the families of victims of the COVID-19 pandemic (or of alcoholism)? As this absurdist reasoning illustrates, the appreciation of many taxonomic names is obviously subjective and context-dependent, influenced by ever-evolving cultural and social norms, combined with worldwide events (Heard & Mlynarek 2023). Although

their intentions are benevolent, the rhetoric of nomenclatural revisionists can thus ultimately promote intolerance and discrimination (Mosyakin 2022).

Despite a prestigious exposure, the idea of reforming nomenclatural rules is only the fruit of a loud minority. In fact, the proposal is being overwhelmingly rejected by more than a thousand scientists from all over the world so far (Jiménez-Mejías *et al*. 2023). Nevertheless, initiatives such as of Guedes *et al*. (2023) continue to fuel the common misassumption by researchers outside the field that taxonomy is somehow a subdiscipline or a service provider (Lambertz 2017). Accordingly, taxonomy is often dismissed as old fashioned by the academic community, receiving little attention and funding compared to other biological sciences, despite the indispensable role it plays to link biodiversity and society (Sigwart *et al*. 2023).

Changing valid taxonomic names is not permitted by any code of biological nomenclature and it should stay that way (Ceríaco *et al*. 2023). Even if it was legally possible, updating existing names would require endless resources for researchers and legislators. Amid the current biodiversity crisis, needless to say that the limited resources of taxonomists, especially in herpetology, should be better spent on the more than 80 % of species that are left to discover and describe on Earth (Mora *et al*. 2011), so they can be adequately protected before going extinct unnoticed.

REFERENCES

Antonelli, A., Farooq, H., Colli-Silva, M., Araújo, J. P. M., Freitas, A. V. L., Gardner, E. M., Grace, O., Gu, S., Marline, L., Nesbitt, M., Niskanen, T., Onana, J. M., Pérez-Escobar, O. A., Taylor, C. & Knapp, S. (2023) People-inspired names remain valuable. *Nature Ecology & Evolution*, **7**: 1161–1162.

Beolens, B., Watkins, M. & Grayson, M. (2013) *The eponym dictionary of Amphibians*. Exeter (Pelagic Publishing): 1–250.

Boettger, O. (1892) *Katalog der Batrachier-Sammlung im Museum der Senckenbergischen Naturforschenden Gesellshaft in Frankfurt am Main*. Frankfurt a. M. (Gebrüder Knauer): 1–73.

Bonaparte, C. L. J. L. (1839) *Iconografia della Fauna Italica per le quattro classi degli Animali Vertebrati*. Tomo II. Amphibi. Fascicolo 24. Rome (Salviucci). 1–560 + 54 pl.

Ceríaco, L. M. P., Aescht, E., Ahyong, S. T., Ballerio, A., Bouchard, P., Bourgoin, T., Dmitriev, D., Evenhuis, N., Grygier, M. J., Harvey, M. S., Kottelat, M., Kluge, N., Krell, F.-T., Kojima, J.-I., Kullander, S. O., Lucinda, P., Lyal, C. H. C., Pyle, R. L., Rheindt, F. E., Scioscia, C. L., Welter-Schultes, D., Whitmore, D., Yanega, D., Zhang, Z.-Q., Zhou, H.-T. & Pape, T. (2023) Renaming taxa on ethical grounds threatens nomenclatural stability and scientific communication. Communication from the International Commission on Zoological Nomenclature. *Zoological Journal of the Linnean Society*, **197**: 283–286.

Evans, S. E., Jones, M. E. H. & Krause, D. (2008) A giant frog with South American affinities from the late Cretaceous of Madagascar. *Proceedings of the national Academy of Sciences of the United States of America*, **105**: 2951–2956.

Gillman, L. N. & Wright S. D. (2020) Restoring indigenous names in taxonomy. *Communications Biology*, **3**: 609.

Guedes, P., Alves-Martins, F., Martínez Arribas, J., Chatterjee, S., Santos, A. M. C., Lewin, A., Bako, L., Webala, P. W., Correia, R. A., Rocha, R. & Ladle, R. J. (2023) Eponyms have no place in 21st-century biological nomenclature. *Nature Ecology & Evolution*, **7**: 1157–1160.

Hammer, T. & Thiele, K. (2021) (119–122) Proposals to amend Articles 51 and 56 and Division III, to allow the rejection of culturally offensive and inappropriate names. *Taxon*, **70**: 1392–1394.

Heard, S. B. & Mlynarek, J. J. (2023) Naming the menagerie: creativity, culture and consequences in the formation of scientific names. *Proceedings of the royal Society*, (B), **290** [20231970]: 1–11.

Hedges, S. B. & Thomas, R. (1992) Two new species of *Eleutherodactylus* from remnant cloud forest in Haiti (Anura: Leptodactylidae). *Herpetologica*, **48** (3): 351–358.

Jiménez-Mejías, P., Manzano, S., Acedo, C., Álvarez, I., Crisci, J. V., Gowda, V., Krell, F.-T., Luceño Garcés, M., Lin, M.-Y., Manning, J., Martín-Bravo, S., Martín-Torrijos, L., Nieto Feliner, G., Moreno Saiz, J. C., Muasya, A. M., Mosyakin, S. L., Naczi, R. F. C., Riina, R., Sánchez-Mata, D. & Sánchez Meseguer, A. *et al*. (2023) Protecting stable biological nomenclatural systems enables universal communication. <https://www.researchgate.net/publication/375446195_Protecting_stable_biological_nomenclatural_systems_enables_universal_communication>. [Accessed on 10 January 2024].

Jost, L., Yanez-Muñoz, M. H., Brito, J., Reyes-Puig, C., Reyes-Puig, J. P., Guayasamín, J. M., Ron, S. R., Quintana, C., Iturralde, G., Baquero, L., Monteros, M., Freire-Fierro, A., Fernández, D., Mendieta-Leiva, G., Morales, J. F., Karremans, A. P., Vázquez-García, J. A., Salazar, G. A., Hágsater, E., Solano, R., Carnevali Fernández-Concha, G. & Arana, M. (2023) Eponyms are important tools for biologists in the Global South. *Nature Ecology & Evolution*, **7**: 1164–1165.

Kuramoto, M. & Wang, C.-S. (1987) A new rhacophorid treefrog from Taiwan, with comparisons to *Chirixalus eiffingeri* (Anura, Rhacophoridae). *Copeia*, **1987** (4): 931–942.

Lambertz, M. (2017) Taxonomy: retain scientific autonomy. *Nature*, **546**: 600.

Laurenti, J. N. (1768) *Specimen medicum, exhibens synopsin Reptilium emendatam cum experimentis circa venena et antidota Reptilium austriacorum.* Viennae (Joan. Thom. Nob. de Trattnern): i–ii + 1–215, pl. 1–5.

Linnaeus, C. (1753) *Species Plantarum*. Stockholm (Laurentius Salvius): i–xi + 1–1200 + i–xxxi.

Linnaeus, C. (1758) *Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis.* Editio decima, reformata. Tomus I. Holmiae (Laurentii Salvii): [i–iv] + 1–824.

Liu, C. (1950) Amphibians of Western China. *Fieldiana: Zoology Memoirs*, **2**: 1–400, pl. 1–10.

Mora, C., Tittensor, D. P., Adl, S., Simpson, A. G. B. & Worm, B. (2011) How many species are there on Earth and in the Ocean? *PLoS Biology*, **9** (8) [e1001127]: 1–8.

Mosyakin, S. L. (2022) Attempts to introduce a system of national, racial and/or ethnocultural discrimination in codes of biological nomenclature should not be tolerated: comments on some recent proposals (Wright & Gillman, 2022, etc.). *Taxon*, **72**: 469–482.

Pérez Ortega, R. (2023) Should beetles be named after Adolf Hitler? *Science*, **381**: 1040–1041.

Pope, C. H. (1929) Four new frogs from Fukien Province, China. *American Museum Novitates*, **352**: 1–5.

Poulin, R., McDougall, C. & Presswell, B. (2022) What's in a name? Taxonomic and gender biases in the etymology of new species names. *Proceedings of the royal Society*, (B), **289** [20212708]: 1–10.

Sigwart, J. D., Chen, C., Tilic, E., Vences, M. & Riehl, T. (2023) Why is there no service to support taxonomy? *BioEssays*, **45** [2300070]: 1–4.

Smith, M. A. (1940) The Amphibians and Reptiles obtained by Mr. Ronald Kaulback in Upper Burma. *Records of the Indian Museum,* **42**: 465–486.

Sugawara, H., Iwata, T., Naito, J., Yamada, M., Onomura, K. & Nagano, M. (2023) Taxonomic validity of *Hynobius hidamontanus* (Caudata: Hynobiidae): descriptions of four new species from western Honshu, Japan. *American Journal of Zoological Research*, **8**: 6–26.

Wright, S. D. & Gillman, L. N. (2022) Replacing current nomenclature with pre-existing indigenous names in algae, fungi and plants. *Taxon*, **71**: 6–10.

Submitted: 10 January 2024.
Accepted: 31 January 2024.
Published: 19 February 2024.

Corresponding Editor: Iñigo MARTÍNEZ-SOLANO.